REMARKS

In response to the official action:

Claims 11-13 were rejected under §112, second paragraph, for failing to distinctly claim the subject matter. As best understood, the Examiner holds claim 11 indefinite for "treating vessel," which is now removed.

As to claim 13, the rejection is respectfully traversed on the basis that no structure outside of the claimed magnet is recited (electroplating is a process, not an apparatus). Withdrawal of the rejection is requested. If the Applicants have misapprehended the rejection, then clarification is requested.

Claim 11 was rejected under §102 as anticipated by Koike (JP '811). This rejection is respectfully traversed.

Koike. The Examiner is invited to consider the attached translation of Koike's claim 6, reciting a "coupling agent" used as a third component. The coupling agent is used for coating the surface of the magnet with the metal powder and filling openings. The Applicants discussed coupling agents at page 3, line 14 of their specification.

The Examiner is also referred to Koike's paragraph [0010], describing an example of a mixture of two volatile solvents, xylene and MEK, and a coupling agent comprising a "silane system." This phrase refers to liquid compounds of silicon and hydrogen which are generally hydrophobic and lipophic and have very low volatility; they are commercially used for coating porous stone surfaces. Koike apparently uses the coupling agent to wet the metal powder and hold it, by surface tension, on the "whole front face" of the magnet. Then (see paragraph [0011]), "many stainless steel spheres as blast media" are applied, and this shot peening smashes the aluminum powder onto the magnet surface, forming a cohesive metal coating.

The blast media are also mentioned several other places in Koike, and in paragraph [0019] Koike describes an alternative process of "spraying a magnet main part by pneumatic pressure in the blast medium which mixed blast media and the metal powder from the nozzle." That is, the magnet is blasted with a mixture of shot and metal powder.

Thus, Koike depends on shot peening and would be unable to coat the inside of a deep cylindrical hole of a magnet (especially with the L/D ratio recited in claim 12) with anything except the wetted powder, which will not protect the surface. Koike does not overcome the drawback of the prior art noted by the Applicants at page 3, line 14 of their specification.

Fine Metal Powder Producing Material. One example of the Applicants' claimed fine metal powder producing material, described starting at page 22, line 18, is composed of metal pieces with sharp ends, such as a needles or columns cut from wire, with a diameter down to 0.05 mm. This material can easily be brought inside a cylindrical hole (bottom of page 23). As a result of the claimed flowing contact of the fine metal powder producing material, the magnet is gradually coated (last paragraph on page 25), in a time between 1 and 15 hours (page 27, line 14).

The Claimed Magnet. The claimed magnet is produced by flowing contact of the fine metal powder producing material and therefore the inside of a hole, even a long hole, is evenly coated. A magnet with a long, metal-coated hole is structurally different from any magnet that can be produced by Koike's shot peening, which will *lack* a long coated hole, and therefore the claimed flowing results in a structural advantage. There will also be microscopic structural differences between films produced by a relatively few large impacts (shot peening) as compared to many small impacts (flowing contact).

Prior to peening, Koike's metal particles do not constitute any protection for a magnet surface, and are structurally inferior to the Applicants' claimed film layer, which is not held by surface tension but instead is a tough metal coating resulting from hours of flowing contact and the gradual buildup of metal in intimate contact with the magnet surface.

Claims 12-13 were rejected under §103 as unpatentable over Koike in view of Yamamoto '362. This rejection is respectfully traversed.

The Examiner asserts that Koike's Fig. 1 shows an entire surface of a magnet with a coating 18 produced by Koike's method, and asserts further that it would have been obvious to apply the Koike method to a hole with an L/D ratio greater than 1. However, as noted above, Koike would be unable to coat the inside of a long hole or a deep hole, because the trajectories of the "many stainless steel spheres" would not reach deep inside. In fact, the Applicants question whether the hole shown in Koike's Fig. 1 (roughly square in aspect ratio) would actually have a coating as thick on the inside the hole as on the outer surfaces, as the drawing seems to show.

The Applicants respectfully submit that the person of ordinary skill in the art would have realized that Koike could never coat the inside of a deep hole and, if he or she desired to coat a long hole (which is not suggested by the prior art itself), would have adopted some method other than shot-peening.

Furthermore, Yamamoto is not seen to actually disclose a long hole. In Fig. 2(a), the elements 11 are steel collars (column 4, line 29) fitted onto a solid "permanent magnet member 10" having a "center portion 10a" and "shaft portions 10b and 10c" (column 3, lines 53-61). With respect, no hole at all is seen by the Applicants. If the Applicants are correct, then no combination of the references (not admitted obvious) could reach the subject matter of claim 12.

New Claims 14-17. These claims recite a layer *consisting of* metal, and thus exclude additional components. (The new claims 14 and 16 differ by "essentially.")

As noted above, Koike discloses (in paragraph [0010]) volatile solvents in its coupling agent mixture, and the coupling agent itself is a "silane system" liquid of low volatility. In Koike's system the volatile components evaporate but the silane system remains, and holds the metal particles in place for peening. Because of its low volatility, the silane-system liquid will remain behind, and therefore constitutes an additional component, contrary to the new claims.

Withdrawal of the rejections and allowance of all claims is requested.

Respectfully submitted,

ARMSTRONG, KRATZ, QUINTOS,
HANSON & BROOKS, LLP

Nick Bromer

Nick Bromer, Registration No. 33,478
(717) 426-1664, voice and fax

Address: Atty. Docket 000164A
Armstrong, Kratz, Quintos, Hanson & Brooks, LLP
1725 K Street, NW
Suite 1000
Washington, DC 20006

(202) 659-2930, voice; (202) 887-0357, fax

I hereby certify that this correspondence is being mailed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, with sufficient postage to cover first-class mailing, on November 6, 2003.

Nick Bromer (reg. no. 33,478) *Signature* Nick Bromer

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